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09/986,599	11/09/2001	Giorgio Sarani	023349-00253	5993

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EXAMINER

HECKENBERG JR, DONALD H

ART UNIT	PAPER NUMBER
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1722

DATE MAILED: 07/02/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/986,599

Applicant(s)

SARANI ET AL.

Examiner

Donald Heckenberg

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-55 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-11, 24-26, 28, 29, 34-39, 45 and 47-55 is/are rejected.
- 7) ☒ Claim(s) 12-23, 27, 30-33, 40-44 and 46 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on November 9, 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4. 6) ☐ Other:

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1. The following are suggestions that would improve the clarity of the claims.

In claim 17, there is no antecedent basis for "the cover" in line 2. A cover is disclosed in the application and other claims (see for example claim 2), and thus, this limitation is not indefinite. However, it would be better to reference "a cover" in this claim. Similarly, it would be better to recite "a cage or case" in claim 45, as these elements have not been previously recited in the their parent claims.

Claims 23-25, 27-31, and 34 contain numbers in parenthesis referencing the drawings. It would be better to consistently use reference numbers throughout the claims, or to eliminate the reference numbers in these claims. If the numbers are kept, the reference in claim 34, line 4 should be corrected to fully enclose the reference "10" in parenthesis.

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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3. Claims 1-2, 4-9, 10-11, 24-25, 28-29, 34, 45, 47-50, and 52-55 are rejected under 35 U.S.C. 102(b) as being anticipated by Japanese Pub. No. 05-285920 (previously of record; hereinafter "JP '920"; reference below will be made to the drawings of the publication, as well as the machine translation of the publication attached to this Office Action).

JP '920 discloses a device and mold for making a casting product with an opening in the product. The mold (11) has a molding cavity delimited by a molding surface which has a window (see figure 1a). The device comprises a punch (13) joined on the window in such a way that it projects into or retracts from the molding cavity (see figures 1-2). The punch is expandable with variations in rigidity (see figures 1-2). The apparatus is further provided with a variation differential constriction means in the form of a seat in mold delimited by rigid bordering walls of the mold (see figure 1a). JP '920 further discloses an actuator means for punch deformation which, in the active condition, is designed to cause the punch to change shape against the opposing reaction of the constriction means (see translation, ¶ 20). The constriction means and the actuator means produce a deformation of the punch, so that the punch projects in the molding cavity (see figure 1a).

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JP '920 further discloses the punch to comprise a cover with an inner cavity designed to contain a fluid substance and thus be expandable, the cover being the material covering the internal cavity (figure 1a). Further, the punch is in effect fitted with a "suitably thick casing" as recited in claim 24, or a "cage" as recited in claim 45.

The cover is deformable due to the action of the fluid substance which it contains as a result of the actuator means (see translation, ¶ 20). JP '920 notes that the cavity of the punch may be filled with a gas, liquid, or particulate material (translation, ¶ 20, line 2), and that the punch is made of an elastic material (translation, ¶ 18). Such a punch deformation system would inherently have to have a pipe-type delivery system to feed the fluid substance to the cavity of the punch.

JP '920 further discloses a means (18) for forced retraction of the punch. The retraction means is designed to apply a vacuum inside the cover cavity (translation, ¶ 20-21).

While disclosing a forced retraction means, the apparatus of JP '920 could also be used in a manner with a free retraction means as recited in claims 52-53. The apparatus is configured with no structure placed behind the punch (see figures 1 & 2), and the elastic punch member is capable of contraction upon depressurization of the internal cavity (see figure 2b). The

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specific manner chosen to retract the punch member and withdraw it from the cavity is not germane to the issue of patentability of the apparatus claims of the instant application. It is well settled that the intended use of an apparatus is not germane to the issue of patentability of the apparatus. If the prior art structure is capable of operating the claimed manner, then it meets the claim limitation(s). In re Casey, 370 F.2d 576, 580 152 USPQ 235, 238 (Cust. & Pat. App. 1967); In re Otto, 312 F.2d 937, 939, 136 USPQ 458, 459 (Cust. & Pat. App. 1963). In the instant case, as the apparatus of JP '920 is capable of operating in the manner recited in claims 52-53. Therefore, the reference anticipates these claim limitations.

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in Graham v. John Deere Co., 383 U.S. 1, 148 USPQ 459 (1966), that are applied for

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establishing a background for determining obviousness under 35

U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary.

Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 3, 35-39, and 51 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP '920 in view of Herbert, Jr. (U.S. Pat. No. 5,087,193).

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JP '920 discloses the apparatus as described above.

Notably, the configuration of JP '920 shows the internal cavity of the punch to be open. JP '920 does not disclose a valve means for the pipe-delivery system.

Herbert discloses a inflatable punch element (26) to be used in a molding operation. The internal cavity (28) is configured to be closed to the outside environment (see figure 6). Hebert notes that such a configuration allows for the formation of a molding surface with stability (column 3, lines 44-50). To close the internal cavity, Herbert provides a closing base wall (34) positioned behind the punch element (26), also for the purpose of stiffing the top side of the element (see column 4, lines 53-56). Herbert further discloses a valve means (66) being provided for the delivery pipe in order to control when the fluid substance is released into the internal cavity (see column 6, line 66 - column 7, line 2).

It would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to have modified the apparatus of JP '920 as such to configured the internal cavity to be closed because such a configuration is a known alternative to the configuration disclosed by JP '920 that allows for a stable molding surface as suggested by Herbert. In order to close the cavity, it would have been obvious to one of ordinary

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skill in the art at the time of Applicant's invention to have used a base wall positioned opposite the window opening because this would have stiffened the mold structure as suggested by Herbert.

It also would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to have modified the apparatus of JP '920 as such to have provided a valve means for the actuating means and delivery pipe because this would control when the fluid substance is released into the internal cavity.

Claims 36-39 recite different shapes for the opening in the seat window. The disclosure of JP '290 shows the seat to be configured to support the shape of the punch element (see figures 1 & 2). Accordingly, it would have been obvious to one of ordinary skill in the art to have changed the shape as needed to support the punch element. Such a modification of the apparatus of JP '920 amounts to a change in the shape of apparatus components without effect apparatus operation. Shape changes that do not otherwise effect apparatus operation are usually seen as obvious to one of ordinary skill in the art. In re Dailey, 357 F.2d 669, 672-73, 149 USPQ 47, 50 (CCPA 1966).

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8. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP '920 in view of Gutowski et al. (U.S. Pat. No. 5,578,158).

JP '920 discloses the apparatus as described above, including the punch material being made from an elastic material (translation, ¶ 18). JP '920 does not specify the elastic material to be silicone rubber. However, silicon rubber is a material well known for its elastic properties. The reference of Gutowski is cited as demonstrating the known elastic properties of silicone rubber (column 5, lines 33-44). Accordingly, it would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to have used silicone rubber to construct the punch because of its known elastic properties.

9. Claims 12-23, 27, 30-33, 40-44, and 46 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. The following is a statement of reasons for the indication of allowable subject matter:

The prior art of record fails to teach or suggest a device for producing an opening or cavity during product molding, the

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mold having a molding cavity delimited by a molding surface which has a window, the device comprising a punch joined on the window in such a way that it projects into or retracts from the molding cavity, wherein the punch is expandable with variations in its rigidity; the device comprising a punch shape variation differential constriction means; and actuator means for punch deformation which, in the active condition, are designed to cause the punch to change shape against the opposing reaction of the constriction means; the constriction means and the actuator means producing a controlled anisotropic deformation of the punch, so that the punch projects into the molding cavity, wherein either: (a) the punch comprises a cover with an inner cavity designed to contain a fluid substance, the cover being deformable due to the action of the fluid substance which it contains; the actuator means changing the shape of the cover against the opposing reaction of the constriction means designed to make the punch project into the molding cavity and wherein the cover is made of a material with deformability which varies according to the direction of deformation, and the differential constriction means being made of the same material as the cover as recited in claim 12; or (b) the punch comprises a cover or casing which has a plurality of projections which can be attached to a plurality of windows as recited in claims 14 and

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33; or (c) wherein the punch has a cover and a casing of suitable thickness for covering at least partially covering the cover as recited in claim 17; or (d) wherein the punch is fitted with a casing at least partially made of metal as recited in claim 27; or (e) wherein the punch is fitted with a casing covered by a cap as recited in claim 30; or (f) wherein the punch is fitted with a casing made from a material with a deformability which varies according to the direction of deformation, the differential constriction means being made of the same material as the casing as recited in claim 31; or (g) wherein the differential constriction means comprise a cage or case which encompasses the punch along at least part of its side surface, counteracting its deformation, leaving the punch free to expand along a punch axial direction as recited in claim 40; or (h) wherein the variation differential constriction means consist of a seat in the body of the mould, the seat having a variable cross-section, and there being a cover with correspondingly variable cross-section housed in the seat as recited in claim 46.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Donald Heckenberg whose telephone number is (703) 308-6371. The


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examiner can normally be reached on Monday through Friday from 9:30 A.M. to 6:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda Walker, can be reached at (703) 308-0457. The official fax phone number for the organization where this application or proceeding is assigned is (703) 872-9310 for responses to non-final action, and 703-872-9311 for responses to final actions. The unofficial fax phone number is (703) 305-3602.



Donald A. Heckenberg
June 26, 2003



JAMES P. MACKEY
PRIMARY EXAMINER
6/26/03